snow, snowmelt, and runoff. To the extent technologically available and economically practicable and achievable, either locate industrial materials and activities inside or protect them with storm resistant coverings in order to minimize exposure to rain, snow, snowmelt, and runoff (although significant enlargement of impervious surface area is not recommended). In minimizing exposure, pay particular attention to the following areas:

Loading and unloading areas: locate in roofed or covered areas where feasible; use grading, berming, or curbing around the loading area to divert run-on; locate the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems.

Material storage areas: locate indoors, or in roofed or covered areas where feasible; install berms/dikes around these areas; use dry cleanup methods.

Note: Industrial materials do not need to be enclosed or covered if stormwater runoff from affected areas will not be discharged to receiving waters.

b. Good Housekeeping

Keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and stowing materials in appropriate containers.

As part of the developed good housekeeping program, include a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust, or debris may accumulate, especially areas where material loading and unloading, storage, handling, and processing occur; and where practicable, the paving of areas where vehicle traffic or material storage occur but where vegetative or other stabilization methods are not practicable (institute a sweeping program in these areas too). For unstabilized areas where sweeping is not practicable, consider using stormwater management devices such as sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, or other equivalent measures that effectively trap or remove sediment.

c. Maintenance

Maintain all control measures which are used to achieve the effluent limits required by this permit in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If control measures need to be replaced or repaired, make the necessary repairs or modifications as expeditiously as practicable.

d. Spill Prevention and Response Procedures

You must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum, you must implement:

(1) Procedures for plainly labeling containers (e.g., "Used Oil", "Spent Solvents", "Fertilizers and Pesticides", etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;

(2) Preventive measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;

(3) Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect or respond to a spill or lead must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your storm water pollution prevention team; and

(4) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

(5) Procedures for documenting where potential spills and leaks could occur that could contribute pollutants to

stormwater discharges, and the corresponding outfalls that would be affected by such spills and leaks.

(6) A procedure for documenting all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance.

e. Erosion and Sediment Controls

Through the use of structural and/or non-structural control measures stabilize, and contain runoff from, exposed areas to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions to meet this limit, place flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion and/or settle out pollutants. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to check out information from both the State and EPA websites. The following two websites are given as information sources: http://www.in.gov/idem/4899.htm and http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm

f. Management of Runoff

Divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in the discharge.

g. Salt Storage Piles or Piles Containing Salt

Enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces. You must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if storm water runoff from the piles is not discharged.

h. Waste, Garbage, and Floatable Debris

Ensure that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.

i. Employee Training

Train all employees who work in areas where industrial material or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team. Training must cover the specific control measures used to achieve the effluent limits in this part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit

j. Non-Stormwater Discharges

You must determine if any non-stormwater discharges not authorized by an NPDES permit exist. Any non-stormwater discharges discovered must either be eliminated or modified into this permit.

k. Dust Generation and Vehicle Tracking of Industrial Materials

You must minimize generation of dust and off-site tracking of raw, final, or waste materials.

6. Annual Review

At least once every 12 months, you must review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limitations in this permit. You must document the results of your review in a report that shall be retained within the SWPPP. You must also submit the report to the Industrial NPDES Permit Section on an annual basis.

7. Corrective Actions – Conditions Requiring Review

a. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to ensure that the condition is eliminated and will not be repeated (except for f, which may or may not require changes):

(1) an authorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this NPDES permit) occurs at this facility;

(2) it is determined that your control measures are not stringent enough for the discharge to meet applicable water quality standards;

(3) it is determined in your routine facility inspection, an inspection by EPA or IDEM, comprehensive site evaluation, or the Annual Review required in Part J.6 that modifications to the control measures are necessary to meet the effluent limits in this permit or that your control measures are not being properly operated and maintained; or

(4) Upon written notice by the Commissioner that the control measures prove to be ineffective in controlling pollutants in storm water discharges exposed to industrial activity.

b. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limits in this permit:

(1) sampling results in accordance with Part J.2(g) show an exceedance of a baseline concentration; or

(2) construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increase the quantity of pollutants discharged.

8. Corrective Action Deadlines

You must document your discovery of any of the conditions listed in Part I.J.7 within thirty (30) days of making such discovery. Subsequently, within one-hundred and twenty (120) days of such discovery, you must document any corrective action(s) to be taken to eliminate or further investigate the deficiency or if no corrective action is needed, the basis for that determination. Specific documentation required within 30 and 120 days is detailed below. If you determine that changes to your control measures are necessary following your review, any modifications to your control measures must be made before the next storm event if possible, or as soon as practicable following that storm event. These time intervals are not grace periods, but schedules considered reasonable for the documenting of your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting

the need for these repairs and improvements are not allowed to persist indefinitely.

9. Corrective Action Report

Within 30 days of a discovery of any condition listed in Part I.J.7, you must document the following information:

a. Brief description of the condition triggering corrective action;

b. Date condition identified; and

c. How deficiency identified.

Within 120 days of discovery of any condition listed in Part I.J.7, you must document the following information:

a. Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.J.7.e, where you determine that corrective action is not necessary, the basis for this determination)

b. Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;

c. Date corrective action initiated; and

d. Date corrective action completed or expected to be completed.

10. Inspections

The inspections in this part must be conducted at this facility.

a. At a minimum, quarterly inspections of the stormwater management measures and stormwater run-off conveyances. The routine inspections must be performed by qualified personnel with at least one member of your storm water pollution prevention team. Inspections must be documented and either contained in, or have the on-site record keeping location referenced in, the SWP3.

b. Routine Facility Inspection Documentation – You must document the findings of each routine facility inspection performed and maintain this documentation with your SWPPP or have the on-site record keeping location referenced in the SWPPP. At a minimum, your documentation must include:

(1) The inspection date and time;

(2) The name(s) and signature(s) of the inspectors;

(3) Weather information and a description of any discharges occurring at the time of the inspection;

(4) Any previously unidentified discharges of pollutants from the site;

(5) Any control measures needing maintenance or repairs;

(6) Any failed control measures that need replacement;

(7) Any incidents of noncompliance observed; and

(8) Any additional control measures needed to comply with the permit requirements.

Any corrective action required as a result of a routine facility inspection must be performed consistent with Part I.J.7 of this permit.

c. Comprehensive Site Compliance Evaluation – Qualified personnel shall conduct a comprehensive site compliance evaluation, at least once per year, to confirm the accuracy of the description of potential pollution sources contained in the plan, determine the effectiveness of the plan, and assess compliance with the permit. Such evaluations shall provide:

(1) Areas contributing to a stormwater discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measure, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

As part of the routine inspections, address all potential

sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitator, scrubbers, and cyclones), for any signs of degradation (e.g., leaks, corrosion, or improper operation) that could limit their efficiency and lead to excessive emissions. Considering monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes, and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing coke, coal, scrap, or slag, as well as chemicals stored in tanks and drums) for signs of material loss due to wind or stormwater runoff.

(2) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with Part I.K.2.b of this permit and pollution prevention measures and controls identified in the plan in accordance with Part I.J.5. of this permit shall be revised as appropriate within the timeframes contained in Part I.J.8 of this permit.

(3) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with the above paragraph must be documented and either contained in, or have on-site record keeping location referenced in, the SWP3 at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with the signatory requirements of Part II.C.6 of this permit.

(4) Where compliance evaluation schedules overlap the inspections required under Part I.K.2.c.(1)(D), the compliance evaluation may be conducted in place of one such inspection.

K. STORM WATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within 12 months from the effective date of this permit, the permittee is required to revise and update the current Storm Water Pollution Prevention Plan (SWP3) for the permitted facility. The plan shall at a minimum include the following:

a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. Storm water associated with industrial activity (defined in 40 CFR 122.26(b)(14)) includes, but is not limited to, the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or materials storage areas at an industrial plant;

b. Describe practices and measure to be used in reducing the potential for pollutants to be exposed to storm water; and

c. Assure compliance with the terms and conditions of this permit.

2. Contents

The plan shall include, at a minimum, the following items:

a. Pollution Prevention Team -The plan shall list, by position title, the member or members of the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan (SWP3) and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each storm water pollution prevention team member. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.

b. Description of Potential Pollutant Sources – The plan shall provide a description of areas at the site exposed to industrial activity and have a reasonable potential for storm water to be exposed to pollutants. The plan shall identify all activities and significant materials (defined in 40 CFR 122.26(b)), which may potentially be significant pollutant sources. As a minimum, the plan shall contain the following:

(1) A soils map indicating the types of soils found on the facility property and showing the boundaries of the facility property.

(2) A graphical representation, such as an aerial photograph or site layout maps, drawn to an appropriate scale, which contains a legend and compass coordinates, indicating, at a minimum, the following:

(A) All on-site storm water drainage and discharge conveyances, which may include pipes, ditches, swales, and erosion channels, related to a storm water discharge.

(B) Known adjacent property drainage and discharge conveyances, if directly associated with run-off from the facility.

(C) All on-site and known adjacent property water bodies, including wetlands and springs.

(D) An outline of the drainage area for each outfall.

(E) An outline of the facility property, indicating directional flows, via arrows, of surface drainage patterns.

(F) An outline of impervious surfaces, which includes pavement and buildings, and an estimate of the impervious and pervious surface square footage for each drainage area placed in a map legend.

(G) On-site injection wells, as applicable.

(H) On-site wells used as potable water sources, as applicable.

(I) All existing major structural control measures to reduce pollutants in storm water run-off.

(J) All existing and historical underground or aboveground storage tank locations, as applicable.

(K) All permanently designated plowed or dumped snow storage locations.

(L) All loading and unloading areas for solid and liquid bulk materials.

(M) All existing and historical outdoor storage areas for raw materials, intermediary products, final products, and waste materials. Include materials handled at the site that potentially may be exposed to precipitation or runoff, areas where deposition of particulate matter from process air emissions or losses during material-handling activities.

(N) All existing or historical outdoor storage areas for fuels, processing equipment, and other containerized materials, for example, in drums and totes.

(O) Outdoor processing areas.

(P) Dust or particulate generating process areas.

(Q) Outdoor assigned waste storage or disposal areas.

(R) Pesticide or herbicide application areas.

(S) Vehicular access roads.

(T) Identify any storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories, or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operation, etc., and could result in a discharge of pollutants.

The mapping of historical locations is only required if the historical locations have a reasonable potential for stormwater exposure to historical pollutants.

(3) An area site map that indicates:

(A) The topographic relief or similar elevations to determine surface drainage patterns;

(B) The facility boundaries;

(C) All receiving waters; and

(D) All known drinking water wells; and

Includes at a minimum, the features in clauses (A), (C), and (D) within a one-fourth (1/4) mile radius beyond the property boundaries of the facility. This map must be to scale and include a legend and compass coordinates.

(4) A narrative description of areas that generate stormwater discharges exposed to industrial activity including descriptions for any existing or historical areas listed in subdivision 2.b.(2)(J) through (S) of this Part, and any other areas thought to generate storm water discharges exposed to industrial activity. The narrative descriptions for each identified area must include the following:

(A) Type and typical quantity of materials present in the area.

(B) Methods of storage, including presence of any secondary containment measures.

(C) Any remedial actions undertaken in the area to eliminate pollutant sources or exposure of storm water to those sources. If a corrective action plan was developed, the type of remedial action and plan date shall be referenced.

(D) Any significant release or spill history dating back a period of three (3) years from the effective date of this permit, in the identified area, for materials spilled outside of secondary containment structures and impervious surfaces in excess of their reportable quantity, including the following:

i. The date and type of material released or spilled.

ii. The estimated volume released or spilled.

iii. A description of the remedial actions undertaken, including disposal or treatment.

Depending on the adequacy or completeness of the remedial actions, the spill history shall be used to determine additional pollutant sources that may be exposed to storm water. In subsequent permit terms, the history shall date back for a period of five (5) years from the date of the permit renewal application.

(E) Where the chemicals or materials have the potential to be exposed to storm water discharges, the descriptions for each identified area must include a risk identification analysis of chemicals or materials stored or used within the area. The analysis must include the following:

i. Toxicity data of chemicals or materials used within the area, referencing appropriate material safety data sheet information locations.

ii. The frequency and typical quantity of listed chemicals or materials to be stored within the area.

iii. Potential ways in which storm water discharges may be exposed to listed chemicals and materials.

iv. The likelihood of the listed chemicals and materials to come into contact with water.

(5) A narrative description of existing and planned management practices and measures to improve the quality of storm water run-off entering a water of the state. Descriptions must be created for existing or historical areas listed in subdivision 2.b.(2)(J) through (S) and any other areas thought to generate storm water discharges exposed to industrial activity. The description must include the following:

(A) Any existing or planned structural and nonstructural

control practices and measures.

(B) Any treatment the storm water receives prior to leaving the facility property or entering a water of the state.

(C) The ultimate disposal of any solid or fluid wastes collected in structural control measures other than by discharge.

(D) Describe areas that due to topography, activities, or other factors have a high potential for significant soil erosion.

(E) Document the location of any storage piles containing salt used for deicing.

(F) Information or other documentation required under subsection (d) of this plan.

(6) The results of stormwater monitoring. The monitoring data must include completed field data sheets, chain-of-custody forms, and laboratory results. If the monitoring data are not placed into the facility's SWP3, the on-site location for storage of the information must be reference in the SWP3.

c. Non-Stormwater Discharges – You must document that you have evaluated for the presence of non-storm water discharges not authorized by an NPDES. Any non-storm water discharges have either been eliminated or incorporated into this permit. Documentation of non-storm water discharges shall include

(1) A written non-storm water assessment, including the following:

(A) A certification letter stating that storm water discharges entering a water of the state have been evaluated for the presence of illicit discharges and non-storm water contributions.

(B) Detergent or solvent-based washing of equipment or vehicles that would allow washwater additives to enter any storm water only drainage system shall not be allowed at this facility unless appropriately permitted under this NPDES permit.

(C) All interior maintenance area floor drains with the potential for maintenance fluids or other materials to enter storm water only storm sewers must be either sealed, connected to a sanitary sewer with prior authorization, or appropriately permitted under this NPDES permit. The sealing, sanitary sewer connecting, or permitting of drains under this item must be documented in the written non-storm water assessment program.

(D) The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during the test.

d. General Requirements – The SWP3 must meet the following general requirements:

(1) The plan shall be certified by a qualified professional. The term qualified professional means an individual who is trained and experienced in water treatment techniques and related fields as may be demonstrated by state registration, professional certification, or completion of course work that enable the individual to make sound, professional judgments regarding storm water control/treatment and monitoring, pollutant fate and transport, and drainage planning.

(2) The plan shall be retained at the facility and be available for review by a representative of the Commissioner upon request. IDEM may provide access to portions of your SWP3 to the public.

(3) The plan must be revised and updated as required. Revised and updated versions of the plan must be implemented on or before three hundred sixty-five (365) days from the effective date of this permit. The Commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.

(4) If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWP3, these plans may be referenced,

at the permittee's discretion, in the appropriate sections of the SWP3 to meet those section requirements.

(5) The permittee may combine the requirements of the SWP3 with another written plan if:

(A) The plan is retained at the facility and available for review;

(B) All the requirements of the SWP3 are contained within the plan; and

(C) A separate, labeled section is utilized in the plan for the SWP3 requirements.

L. WHOLE EFFLUENT TOXICITY LIMITATIONS

The 1977 Clean Water Act explicitly states, in Section 101(3) that it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited. In support of this policy the U.S. EPA in 1995 amended 40 CFR 136.3 (Tables IA and II) by adding testing method for measuring acute and short-term chronic toxicity of whole effluents and receiving waters. To adequately assess the character of the effluent, and the effects of the effluent on aquatic life, the permittee shall conduct Whole Effluent Toxicity Testing. Part 1 of this section describes the testing procedures, Part 2 describes the Toxicity Reduction Evaluation which is only required if the effluent demonstrated toxicity, as described in section 1.f.

1. Whole Effluent Toxicity Tests

Within 90 days of the effective date of the permit, US Steel shall initiate the series of bioassay tests described below to monitor the toxicity of the discharge from outfalls 005, 030, and 034 on a monthly basis for the first three (3) months and thereafter quarterly for the duration of the NPDES permit. If toxicity is demonstrated as defined under section f. below, the permittee is required to conduct a toxicity reduction evaluation (TRE).

a. Bioassay Test Procedures and Data Analysis

(1) All test organisms, test procedures and quality assurance criteria used shall be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms; Fourth Edition Section 13, Cladoceran (*Ceriodaphnia dubia*) Survival and Reproduction Test Method 1002.0; and Section 11, Fathead Minnow (*Pimephales promelas*) Larval

Survival and Growth Test Method, (1000.0) EPA 821-R-02-013, October 2002, or most recent update.

(2) Any circumstances not covered by the above methods, or that required deviation from the specified methods shall first be approved by the IDEM's Environmental Toxicology and Chemistry Section.

(3) The determination of effluent toxicity shall be made in accordance with the Data Analysis general procedures for chronic toxicity endpoints as outlined in Section 9, and in Sections 11 and 13 of the respective Test Method (1000.0 and 1002.0) of Short-term Methods of Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms (EPA-821-R-02-013), Fourth Edition, October 2002, or most recent update.

b. Types of Bioassay Tests

The permittee shall conduct 7-day Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test and a 7-day Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test on samples of whole effluent for Outfalls 005, 030, and 034. All tests will be conducted on 24-hour composite samples of whole effluent. All test solutions shall be renewed daily. On days three and five fresh 24-hour composite samples of whole effluent collected on alternate days shall be used to renew the test solutions.

If, in any control, more than 10% of the test organisms die in 96 hours, or more than 20% of the test organisms die in 7days, that test shall be repeated. In addition, if in the *Ceriodaphnia* test control the number of newborns produced per surviving female is less than 15, or if 60% of surviving control females have less than three broods; and in the fathead minnow test if the mean dry weight of 7- day old surviving fish in the control group is less than 0.25 mg, that test shall also be repeated. Such testing will determine whether the effluent affects the survival, reproduction, and/or growth of the test organisms. Results of all tests regardless of completion must be reported to IDEM.

c. Effluent Sample Collection and Chemical Analysis

(1) Samples taken for the purposes of Whole Effluent Toxicity Testing will be taken at a point that is representative of the discharge, but prior to discharge. The maximum holding

time for whole effluent is 36 hours for a 24 hour composite sample. Bioassay tests must be started within 36 hours after termination of the 24 hour composite sample collection. Bioassay of effluent sampling may be coordinated with other permit sampling requirements as appropriate to avoid duplication.

(2) Chemical analysis must accompany each effluent sample taken for bioassay test, especially the sample taken for the repeat or confirmation test as outlined in section f.3. below. The effluent sample should be analyzed for all the parameters detailed under Part I.A. for Outfalls 005, 030, and 034. The chemical analysis must comply with approved EPA test methods.

d. Testing Frequency and Duration

The chronic toxicity test specified in section b. above shall be conducted monthly for three (3) months initially and thereafter at least once every quarter for the duration of the permit. After three tests have been completed, that indicate no toxicity as defined in section f. below, the permittee may reduce the number of species tested to only include the most sensitive to the toxicity in the effluent. In the absence of toxicity with either species in the monthly testing for three (3) months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past.

If toxicity is demonstrated as defined under section f. below, the permittee is required to conduct a toxicity reduction evaluation (TRE) as specified in Section 2.

e. Reporting

(1) Results shall be reported according to EPA 821-R-02-013, October 2002, Section 10 (Report Preparation). Two copies of the completed report for each test shall be submitted to the Compliance Evaluation Section, Office of Water Quality of the IDEM no later than sixty days after completion of the test.

(2) For quality control, the report shall include the results of appropriate standard reference toxic pollutant tests for chronic endpoints and historical reference toxic pollutant

data with mean values and appropriate ranges for the respective test species *Ceriodaphnia dubia* and *Pimephales promelas*. Biomonitoring reports must also include copies of Chain-of-Custody Records and Laboratory raw data sheets.

(3) Statistical procedures used to analyze and interpret toxicity data including critical values of significance used to evaluate each point of toxicity should be described and included as part of the biomonitoring report.

f. Demonstration of Toxicity

(1) Acute toxicity will be demonstrated if the effluent is observed to have exceeded 1.0 TU_a (acute toxic units) based on 100% effluent for the test organism in 48 and 96 hours for *Ceriodaphnia dubia* or *Pimephales promelas*, respectively.

TU_a is defined as $100/LC_{50}$.

(2) Chronic toxicity will be demonstrated if the effluent is observed to have exceeded the levels specified below for *Ceriodaphnia dubia* or *Pimephales promelas*.

Outfall	Chronic Toxicity Level	Units
005	1.0	TU_c
030	3.1	TU_c
034	3.6	TU_c

(3) If toxicity is found in any of the tests as specified above, a confirmation toxicity test using the specified methodology and same test species shall be conducted within two weeks of the completion of the failed test to confirm results. During the sampling for any confirmation test the permittee shall also collect and preserve sufficient effluent samples for use in and Toxicity Identification Evaluation (TIE) and/or Toxicity Reduction Evaluation (TRE), if necessary. If any two (2) consecutive tests, including any and all confirmation tests, indicate the presence of toxicity, the permittee must begin the implementation of a Toxicity Reduction Evaluation (TRE) as described below. The whole effluent toxicity tests required above may be

suspended (upon approval from IDEM) while the TRE/TIE are being conducted.

g. Definitions

(1) TU_c is defined as 100/NOEC or $100/IC_{25}$, where the NOEC or IC_{25} are expressed as a percent effluent in the test medium.

(2) TU_a is defined as $100/LC_{50}$ where the LC_{50} is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.

(3) "Inhibition concentration 25" or "IC_{25}" means the toxicant (effluent) concentration that would cause a twenty-five percent (25%) reduction in a nonquantal biological measurement for the test population. For example, the IC_{25} is the concentration of toxicant (effluent) that would cause a twenty-five percent (25%) reduction in mean young per female or in growth for the test population.

(4) "No observed effect concentration" or "NOEC" is the highest concentration of toxicant (effluent) to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms, that is, the highest concentration of toxicant (effluent) in which the values for the observed responses are not statistically significantly different from the controls.

(5) "Quarterly" defined for the purposes of taking samples during a given quarter will be defined as in the months of March, June, September, and December.

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE (including any post-TRE biomonitoring requirements) is only required if toxicity is demonstrated as defined in section 1.f. above.

a. Development of TRE Plan

Within 90 days of determination of toxicity, the permittee shall submit plans for an effluent toxicity reduction evaluation (TRE) to the Compliance Evaluation Section, Office of Water Quality, of the IDEM. The TRE plan shall include appropriate measures to characterize the causative toxicants and the variability associated with these compounds. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications list below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

Phase I Toxicity Characteristics Procedures, Second Edition (EPA/600/6-91/003, February 1991.

Phase II Toxicity Identification Procedures (EPA 600R2-080), September 1993.

Phase III Toxicity Confirmation Procedures (EPA 600R92-081), September 1993.

(2) Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I. EPA/600/6-91/005F, May 1992.

(3) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), (EPA/600/2-88/070), April 1989.

(4) Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatments Plants (EPA/833-B-99-022) August 1999.

b. Conduct the Plan

Within 30 days after the submission of the TRE plan to IDEM, the permittee must initiate an effluent TRE consistent with the TRE plan. Progress reports shall be submitted every 90 days to the Data Management and Compliance Evaluation Sections of the Office of Water Quality (OWQ) beginning 90 days after initiation of the TRE study.

c. Reporting

Within 90 days of the TRE study completion, the permittee shall submit to the Data Management and Compliance Evaluation Section of the Office of Water Quality (OWQ) the final study

results and a schedule for reducing the toxicity to acceptable levels through control of the toxicant source or treatment of whole effluent.

d. Compliance Date

The permittee shall complete items a, b, and c from Section 2 above, and reduce the toxicity to acceptable levels as soon as possible, but no later than three years after the date of determination of toxicity.

e. Post-TRE Biomonitoring Requirements (Only Required After Completion of a TRE)

After the TRE, the permittee shall conduct monthly toxicity tests with 2 or more species for a period of three months. Should three consecutive monthly tests demonstrate no toxicity, the permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent (see section L.1.d., for more specifics on the topic), and conduct chronic tests quarterly for the duration of the permit.

If toxicity is demonstrated, as defined in section 1.f. above, after the initial three month period, testing must revert to a TRE as in Part 2 (TRE). These tests shall be conducted in accordance with the procedures under the Whole Effluent Toxicity Testing Section above.

M. REPORTING REQUIREMENTS FOR SOLVENTS, DEGREASING AGENTS, ROLLING OILS, WATER TREATEMENT CHEMICALS AND BIOCIDES

Annually, US Steel will report as part of the fourth monthly Discharge Monitoring Report of the following year, the total quantity (lbs/yr) of each solvent, degreasing agent, water treatment chemical, rolling oil and biocide that was purchased for that year and which can be present in any outfall regulated by this permit. This reporting requirement includes all surfactants, anionic, cationic and non-ionic, which may be used in part or wholly as a constituent in these compounds.

US Steel will maintain these files for a period of ten years. Files will include the Material Safety Data Sheet, FIFRA Label for each biocide, chemical name and CAS Number for each compound used. If these compounds contain proprietary material, US Steel may maintain this information in a separate file that can be accessed by U.S. EPA or IDEM personnel with appropriate authority.

N. TOXIC ORGANIC POLLUTANT MANAGEMENT PLAN

In order to use the Certification Statement for Total Toxic Organics on Page 36 and 37 of this permit, the Permittee is required to submit a management plan for toxic organic pollutants. The Toxic Organic Pollutant Management Plan is to be submitted to the Compliance Evaluation Section of the Office of Water Quality within ninety (90) days of the effective date of this permit, and is to include a listing of toxic organic compounds used, the method of disposal, and procedure for ensuring that these compounds do not routinely spill or leak into the process wastewater, non-contact cooling water, groundwater, storm water, or other surface waters.

Upon review by IDEM of the above report the Permittee may be required to perform additional specific monitoring for toxic organics, or may be allowed to use the Certification Statement on Page 37.

O. VISIBLE OIL CORRECTIVE ACTION MONITORING PROGRAM

The permittee shall monitor the Grand Calumet River and Lake Michigan, in the vicinity of Outfalls 005, 015, 018, 019, 020, 030, 033, 034, 035, and 037 in the manner, and following the procedures and protocols, as established between United States Steel and US EPA.

Frequency shall be at a rate of 5 X Weekly. All records for this program shall be maintained at the facility for inspection and review by IDEM.

P. ZEBRA AND QUAGGA MUSSEL CONTROL AND CHLORINATION

As a means of controlling both the Zebra and Quagga Mussel colonization at the US Steel Gary Works Facility, the permittee can chlorinate the intake water on a continuous basis year round. Wastewater will be de-chlorinated prior to discharge from an external Outfall. Currently, the affected outfalls are the following: 005, 015, 018, 019, 020, 021, 028, 030, 032, 033, 034, 035, 037, 039, 041A, and 041B.

In addition to the numeric effluent limitations specified at each individual outfall the following requirements shall apply:

The monthly average water quality based effluent limit (WQBEL) for Total Residual Chlorine is less than the limit of quantitation (LOQ) as defined below. Compliance with the monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. Daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the

limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.

The daily maximum WQBEL for Total Residual Chlorine is less than the LOD as specified below. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOD. Effluent levels greater than or equal to the LOD but less than the LOQ are in compliance with the daily maximum WQBEL, except when confirmed by a sufficient number of analyses of multiple samples and use of appropriate statistical techniques.

For calculating the monthly average mass values, See Part III.E. of this permit.

At present, two methods are considered to be acceptable to IDEM, amperometric and DPD colorimetric methods, for chlorine concentrations at the level of 0.06 mg/l.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D,E	0.02 mg/l	0.06 mg/l
Chlorine	4500-Cl-G	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

Q. CYANIDE REQUIREMENTS

Sample preservation procedures and maximum allowable holding times for total cyanide, or available (free) are prescribed in Table II of 40 CFR Part 136. Note the footnotes specific to cyanide. Preservation and holding time information in Table II takes precedence over information in specific methods or elsewhere. Therefore, cyanide is to be monitored by collecting a representative grab sample and analyzing it within 24 hours. "Representative Grab Sample" is defined as a sample type of three grab samples within 24 hours.

Upon demonstration to IDEM that "no Sulfides" are present at the effected internal and/or final outfalls and IDEM has reviewed and approved the demonstration, the permittee may collect samples by 24-Hr. Composite.

R. MERCURY MONITORING REQUIREMENTS

Mercury monitoring shall be conducted Bi-monthly. (i.e. every other month) for the term of the permit. Bi-monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

Beginning from the effective date of the permit, the permittee shall begin using EPA Test Method 1631, "the most current version". If EPA Test Method 1631, Revision E, is further revised during the term of the permit, the permittee and/or its contract laboratory are required to utilize the most current version of the method as soon as possible after approval by EPA but no later than the second monitoring event after the revision.

Parameter	Test Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all terms and conditions of this permit in accordance with 327 IAC 5-2-8(1) and all other requirements of 327 IAC 5-2-8. Any permit noncompliance constitutes a violation of the Clean Water Act and IC 13 and is grounds for enforcement action or permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit. During periods of noncompliance, the permittee shall conduct such accelerated or additional monitoring for the affected parameters, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

3. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must obtain and submit an application for renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to obtain and submit the application. In accordance with 327 IAC 5-2-3(c), the owner of the facility or operation from which a discharge of pollutants occurs is responsible for applying for and obtaining the NPDES permit, except where the facility or operation is operated by a person other than an employee of the owner in which case it is the operator's responsibility to apply for and obtain the permit. Pursuant to 327 IAC 5-3-2(a)(2), the application must be submitted at least 180 days before the expiration date of this permit. This deadline may be extended if:

a. permission is requested in writing before such deadline;

b. IDEM grants permission to submit the application after the deadline; and

c. the application is received no later than the permit expiration date.

4. Permit Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except in accordance with 327 IAC 5-2-6(c). This permit may be transferred to another person by the permittee, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

a. the current permittee notified the Commissioner at least thirty (30) days in advance of the proposed transfer date.

b. a written agreement containing a specific date of transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgment that the existing permittee is liable for violations up to that date, and the transferee is liable for violations from that date on) is submitted to the Commissioner.

c. the transferee certifies in writing to the Commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the Commissioner may allow a temporary transfer of the permit without permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment

system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility.

d. the Commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act or state law.

5. Permit Actions

In accordance with 327 IAC 5-2-16(b) and 327 IAC 5-2-8(4), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;
b. Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts in the application, or during the permit issuance process; or

c. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit, e.g., plant closure, termination of discharge by connection to a POTW, a change in state law that requires the reduction or elimination of the discharge, or information indicating that the permitted discharge poses a substantial threat to human health or welfare.

Filing of either of the following items does not stay or suspend any permit condition: (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) submittal of information specified in Part II.A.3 of the permit including planned changes or anticipated noncompliance.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility that:

1. could significantly change the nature of, or increase the quantity of pollutants discharged; or

2. the commissioner may request to evaluate whether such cause exists.

In accordance with 327 IAC 5-1-3(a)(5), the permittee must also provide any information reasonably requested by the Commissioner.

6. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or invasion of other private rights, any infringement of federal, state, or local laws or regulations. The issuance of the permit also does not preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

7. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstance is held invalid, the invalidity shall not affect any other provisions or applications of the permit which can be given effect without the invalid provision or application.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act or state law.

10. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Water Pollution Control Board is liable for a civil penalty not to exceed twenty-five thousand dollars ($25,000) per day of any violation.

Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated

agent in the performance of an inspection or investigation performed under IC 13-14-2-2 commits a class C infraction.

Pursuant to IC 13-30-10-1.5(k), a person who willfully or recklessly violates any NPDES permit condition or filing requirement, any applicable standards or limitations of IC 13-18-3-2.4, IC 13-18-4-5, IC 13-18-8, IC 13-18-9, IC 13-18-10, IC 13-18-12, IC 13-18-14, IC 13-18-15, or IC 13-18-16, or who knowingly makes any false material statement, representation, or certification in any NPDES form, notice, or report commits a Class C misdemeanor.

An offense under IC 13-30-10-1.5(k) is a Class D felony if the offense results in damage to the environment that renders the environment unfit for human or vertebrate animal life. An offense under IC 13-30-10-1.5(k) is a Class C felony if the offense results in the death of another person.

11. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(9), the permittee shall comply with monitoring, recording, and reporting requirements of this permit. The Clean Water Act, as well as IC 13-30-10, provides that any person who knowingly or intentionally (a) destroys, alters, conceals, or falsely certifies a record that is required to be maintained under the terms of a permit issued by the department; and may be used to determine the status of compliance, (b) renders inaccurate or inoperative a recording device or a monitoring device required to be maintained by a permit issued by the department, or (c) falsifies testing or monitoring data required by a permit issued by the department commits a Class B misdemeanor.

12. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health, and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants injurious to human health are effective and must be complied with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

13. Wastewater treatment plant and certified operators

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required

by IC 13-18-11-11 and 327 IAC 5-22. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7.

327 IAC 5-22-10(b) provides that a certified operator may be designated as being in responsible charge of more than one (1) wastewater treatment plant, if it can be shown that he will give adequate supervision to all units involved. Adequate supervision means that sufficient time is spent at the plant on a regular basis to assure that the certified operator is knowledgeable of the actual operations and that test reports and results are representative of the actual operations conditions. In accordance with 327 IAC 5-22-3(10), "responsible charge" means the person responsible for the overall daily operation, supervision, or management of a wastewater facility.

Pursuant to 327 IAC 5-22-10(a), the permittee shall notify IDEM when there is a change of the person serving as the certified operator in responsible charge of the wastewater treatment facility. The notification shall be made no later than thirty (30) days after a change in the operator.

14. Construction Permit

In accordance with IC 13-14-8-11.6, a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

If the discharger modifies their existing water pollution treatment or control facility or constructs a new water pollution treatment or control facility for the treatment or control of any new influent pollutant or increased levels of any existing pollutant, then, within thirty (30) days after commencement of operation, the discharger shall file with the Department of Environment Management a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

> The notice and design summary shall be sent to the Office of Water Quality - Mail Code 65-42, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

15. Inspection and Entry

In accordance with 327 IAC 5-2-8(7), the permittee shall allow the Commissioner, or an authorized representative, (including an authorized contractor acting as a representative of the Commissioner) upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a point source, regulated facility, or activity is located or conducted, or where records must be kept pursuant to the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;

c. Inspect at reasonable times any facilities, equipment or methods (including monitoring and control equipment), practices, or operations regulated or required pursuant to this permit; and

d. Sample or monitor at reasonable times, any discharge of pollutants or internal wastestreams for the purposes of evaluating compliance with the permit or as otherwise authorized.

16. New or Increased Discharge of Pollutants

This permit prohibits the permittee from undertaking any action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a pollutant parameter that is not a BCC unless one of the following is completed prior to the commencement of the action:

a. Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 5-2-11.3(b)(1). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the submittal of an antidegradation demonstration.

b. An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 5-2-11.3(b)(3) through (6).

B. MANAGEMENT REQUIREMENTS

1. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(8).

Neither 327 IAC 5-2-8(8), nor this provision, shall be construed to required the operation of installed treatment facilities that are unnecessary for achieving compliance with the terms and conditions of the permit.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(11):

a. Terms as defined in 327 IAC 5-2-8(11)(A):

(1) "Bypass" means the intentional diversion of a waste stream from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. The permittee may allow a bypass to occur that does not cause a violation of the effluent limitations in the permit, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.B.2.c., e, and f of this permit.

c. Bypasses, as defined in (a) above, are prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:

(1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, as defined above;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The permittee submitted notices as required under Part II.B.2.e; or

(4) The condition under Part II.B.2.b above is met.

d. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the "Spill Response and Reporting Requirements" in 327 IAC 2-6.1, including calling 888/233-7745 as soon as possible, but within two (2) hours of discovery.

e. The permittee must provide the Commissioner with the following notice:

(1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.

(2) The permittee shall orally report an unanticipated bypass that exceeds any effluent limitations in the permit within 24 hours of becoming aware of the bypass noncompliance. The permittee must also provide a written report within five (5) days of the time the permittee becomes aware of the bypass event. The written report must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the cause of noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the bypass event. If a complete fax or email submittal is provided within 24 hours of the time that the permittee became aware of the unanticipated bypass event, then that report will satisfy both the oral and written reporting requirement. Emails should be sent to wwreports@idem.in.gov.

f. The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.c. The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(12):

a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include

noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this section, are met.

c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:

(1) An upset occurred and the permittee has identified the specific cause(s) of the upset, if possible;

(2) The permitted facility was at the time being operated in compliance with proper operation and maintenance procedures;

(3) The permittee complied with any remedial measures required under Part II.A.2; and

(4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or 327 IAC 2-6.1, whichever is applicable.

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal. The discharge of pollutants in treated wastewater is allowed in compliance with the applicable effluent limitations in Part I of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(10)(F), the permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility. In this context, permitted facility refers to a point source discharge, not a wastewater treatment facility. Notice is required only when either of the following applies:

a. The alteration or addition may meet one of the criteria for determining whether the facility is a new source as defined in 327 IAC 5-1.5.

b. The alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in Part I.A. nor to notification requirements in Part II.C.9. of this permit.

Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(9) and 327 IAC 5-2-13 through 15, monitoring results shall be reported at the intervals and in the form specified in "Monitoring Reports", Part I.C.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(10)(C), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance. If the noncompliance meets the requirements of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made within those prescribed time frames.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

b. Any noncompliance which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the noncomplying circumstances;

c. Any upset (as defined in Part II.B.3 above) that causes an exceedance of any effluent limitation in the permit;

d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants:

The permittee can make the oral reports by calling (317)232-8670 during regular business hours or by calling (317) 233-7745 ((888)233-7745 toll free in Indiana) during non-business hours. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence. The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. Alternatively the permittee may submit a "Bypass/Overflow Report" (State Form 48373) or a "Noncompliance 24-Hour Notification Report" (State Form 54215), whichever is appropriate, to IDEM at (317) 232-8637 or wwreports@idem.in.gov. If a complete fax or email submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the fax report will satisfy both the oral and written reporting requirements.

4. Other Compliance/Noncompliance Reporting

Pursuant to 327 IAC 5-2-8(10)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3, or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in Part II.C.3;

The permittee shall also give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements; and

All reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

5. Other Information

Pursuant to 327 IAC 5-2-8(10)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

6. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(14):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

(1) For a corporation: by a responsible corporate officer defined as a president, secretary, treasurer, any vice-president of the corporation in charge of a principal business function, or any other person who performs similar policymaking or decision making functions for the corporation or the manager of one or more manufacturing, production or operating facilities employing more than two hundred fifty (250) persons or having the gross annual sales or expenditures exceeding twenty-five million dollars ($25,000,000) (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a Federal, State, or local government body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

b. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility.

(A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The authorization is submitted to the Commissioner.

c. Certification. Any person signing a document identified under Part II.C.6. shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information,

including the possibility of fine and imprisonment for knowing violations."

7. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(14) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance, shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

9. Changes in Discharge of Toxic Substances

Pursuant to 327 IAC 5-2-9, the permittee shall notify the Commissioner as soon as it knows or has reason to believe:

a. That any activity has occurred or will occur which would result in the discharge of any pollutant identified as toxic, pursuant to Section 307(a) of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels."

(1) One hundred micrograms per liter (100µg/l);

(2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitophenol; and one milligram per liter (1mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

(4) A notification level established by the Commissioner on a case-by-case basis, either at his own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2).

b. That it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant which was not reported in the permit application under 40 CFR 122.21(g)(9).

PART III
OTHER REQUIREMENTS

A. Temperature Requirements

1. The following temperature effluent limitations and requirements shall apply to discharges to the Grand Calumet River, subject to the schedule of compliance in Part III.A.3. of this permit:

   a. The monitoring of the Temperature is to occur on a continuous basis at the following locations in the Grand Calumet River:

      Approximately 100 feet downstream of the US Steel Outfall 005, which shall be designated as monitoring point 205; and

      Approximately 100 feet downstream of the US Steel Outfall 020, which shall be designated as monitoring point 220; and

      Approximately 100 feet downstream of the US Steel Outfall 030, which shall be designated as monitoring point 230.

   Temperature measurements taken in the Grand Calumet River at the above locations shall be taken at mid-stream and at a depth of approximately one meter below the water's surface.

   b. Temperature measurements at the above stated locations shall be recorded in one hour intervals. The highest single recorded measurement for each day shall be reported on the state monthly monitoring report for each day. The highest single recorded daily measurement shall be reported on the federal discharge monitoring report as the maximum daily temperature of that month.

   The permittee shall submit an annual summary of the individual data points for the instream temperature at the measuring points for Outfall 205, 220 and 230. The annual summary shall be sent no later than January 31st of the succeeding year to the Industrial NPDES Permits Section of the Office of Water Quality, MC 65-42, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251. The annual summary shall be in a database using Microsoft Excel software copied to a compact disk.

c. The temperature measured at monitoring points 205, 220 and 230 shall not exceed the maximum limits in Temperature Table 1 below.

d.

TEMPERATURE TABLE 1
Maximum Instream Water Temperatures (°F)

Month	Monthly Average	Daily Maximum
January	----	59
February	----	58
March	----	69
April	----	73
May	----	83
June	90	93
July	90	93
August	90	93
September	90	93
October	----	83
November	----	75
December	----	63

d. The number of days where the measured temperature exceeds the limits in Table 1 above shall be reported on the state monthly monitoring report and the federal discharge monitoring report.

e. Monitoring at the following individual outfalls [005, 015, 018, 019, 020, 028, 030, and 034] shall be taken on the same day of the week. Where temperature is sampled at 6 grabs/day, the samples shall be equally spaced throughout the day. The highest temperature value measured shall be the value reported for that day.

f. There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.

g. The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other natural causes shall be maintained.

h. US Steel will submit to IDEM within 12 months from the effective date of this permit modification a study plan to be reviewed and approved by IDEM to do a fish community study of the Grand Calumet River in the segments of these discharge points. The actual study must be conducted and the results submitted within 12 months of IDEM study plan approval or with the next permit renewal application, whichever is later.

2. DISCHARGES TO LAKE MICHIGAN

The following temperature effluent limitations and requirements shall apply to discharges from Outfalls 035, 037, and 039 to Lake Michigan.

a. There shall be no abnormal temperature changes so as to be injurious to fish, wildlife, or other aquatic life, or the growth or propagation thereof. In addition, plume interaction with the bottom shall be minimized and shall not injuriously affect fish, shellfish, and wildlife spawning or nursery areas.

b. The normal daily and seasonal temperature fluctuations that existed before the addition of heat shall be maintained.

c. Discharge flow, discharge temperature, and intake temperature shall be continuously monitored at intake structures No. 1, No. 2 and the Lakeside Pump Stations, and at Outfalls 035, 037, and 039 discharges.

d. The facilities described as follows that discharge into the open waters of Lake Michigan shall be limited to the amount essential for blowdown in the operation of a closed cycle cooling facility:

(i) All facilities that have new waste heat discharges exceeding a daily average of five-tenths (0.5) billion British thermal units per hour. As used in this item, "new waste heat discharge" means a discharge that had not begun operations as of February 11, 1972.

(ii) All facilities with existing waste heat discharges that increase the quantity of waste heat discharged by more than a daily average of five-tenths (0.5) billion British thermal units per hour.

e. Thermal plumes shall not overlap or intersect except for discharges in existence as of the date that 327 IAC 2-2.5-8(c)(4)(D)(vii) became effective.

f. Facilities discharging more than a daily average of five-tenths (0.5) billion British thermal units of waste heat shall continuously record intake and discharge temperature and discharge flow and make those records available to the public or regulatory agencies upon request.

The thermal discharge shall be computed as follows:

Thermal Discharge (E*6 Btu./Hr.) = Q x ($T_o - T_i$) x 0.3477

where,

E*6, converts to million Btu/Hr.
Q = 24 hour discharge flow, MGD.
T_o = 24 hour average effluent temperature, $^{\circ}$F
T_i = 24 hour average intake temperature, $^{\circ}$F
0.3477, conversion factor

g. At any time and at a maximum distance of a one thousand (1,000) foot arc inscribed from a fixed point adjacent to the discharge:

(i) The receiving water temperature shall not be more than three degrees Fahrenheit (3°F) above the existing natural water temperature; and

(ii) Thermal discharges to Lake Michigan shall comply with the following maximum temperature requirements:

(1) The thermal discharge to Lake Michigan shall not raise the maximum temperature in the receiving water above those listed in the following table, except to the extent the permittee adequately demonstrates that the exceedance is caused by the water temperature of the intake water in accordance with Part III.A.2.g.(ii)(2):

Temperature Table 2
Maximum Water Temperature $^{\circ}$F

January	45	July	80
February	45	August	80
March	45	September	80
April	55	October	65
May	60	November	60
June	70	December	50

(2) If the permittee demonstrates that the intake water temperature is within three (3) degrees Fahrenheit below an applicable maximum temperature in Temperature Table (2) above, then no more than a three (3) degree Fahrenheit exceedance of the maximum water temperature shall be permitted.

h. The permittee shall submit an annual summary of the individual data points for the effluent temperature at Outfalls 035, 037, and 039 discharges. The annual summary shall be sent no later than January 31st of the succeeding year to the Industrial NPDES Permits Section of the Office of Water Quality, MC 65-42, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251. The annual summary shall be in a database using Microsoft Excel software copied to a compact disk.

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B. BIOCIDES

The permittee must receive written permission from the Indiana Department of Environmental Management to use any biocide or molluscicide other than those which have been previously submitted and received written approval at the time the permit became effective.

C. COOLING WATER INTAKE STRUCTURES

1. BEST TECHNOLOGY AVAILABLE (BTA) EVALUATION

Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326) requires that facilities minimize adverse environmental impact resulting from the operation

of cooling water intake structures (CWIS) by using the "best technology available" (BTA). The only applicable federal regulation for implementing Section 316(b) at the Gary Works Facility is 40 C.F.R. §125.90(b). This regulation requires that the BTA be determined using Best Professional Judgment (BPJ). The cooling water intake structures operated by the US Steel Corporation at the Gary Works Facility have been evaluated under BPJ and utilizing all available information to reach the following BTA determination. A discussion of the BPJ evaluation and a summary of the documentation submitted by US Steel can be found in the Fact Sheet.

At this time IDEM has determined that the existing cooling water intake structures represent best technology available to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326). This determination will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

USS shall at all times properly operate and maintain the cooling water intake structure and associated equipment to minimize adverse environmental impact, consistent with the operational and maintenance practices taken into account in the BTA determination.

As a condition of this BTA determination, the facility must ensure that the through screen velocity for each intake does not exceed 0.5ft/s through either design or operational measures.

2. MONITORING REQUIREMENTS

The purpose of the monitoring studies shall be to further characterize the nature and extent of the environmental impacts from the CWISs in a scientifically valid manner. Impingement and entrainment have been determined to be appropriate measures for determining that adverse environmental impacts have been minimized.

a. Entrainment

(i) For as long as this permit is effective, U. S. Steel will conduct scientifically valid entrainment studies at the Lakeside and #2 Pump Stations. Sampling periods for the studies shall be determined after taking into consideration the expected spawning period for the species of interest. Sampling techniques will be appropriate for the water body and ensure that sufficient data are developed to allow for a scientifically valid estimate of potential entrainment

impacts. Appropriate quality assurance/quality control procedures will be utilized.

(ii) Within one year of the effective date of the permit, U. S. Steel will submit to IDEM a specific, detailed proposal for how it intends to conduct the entrainment studies consistent with Paragraph a.(i) during the second and third year of the permit term at the Lakeside and #2 Pump Stations. The proposal should be provided to IDEM at least 90 (ninety) days prior to the start of the proposed studies.

(iii) Until this permit is no longer effective, U. S. Steel will submit to IDEM similar proposals for how it intends to conduct entrainment studies consistent with Paragraph a.(i) for each subsequent two year period (i.e., during the fourth and fifth year that this permit is in effect; during the sixth and seventh years that this permit is in effect; etc.), that takes into account any information developed during the prior years' studies. These proposals shall be submitted to IDEM at least 90 (ninety) days prior to the start of the proposed studies.

(iv) U. S. Steel will conduct the entrainment studies consistent with Paragraph a.(i). The studies should be performed consistent with the proposals submitted in accordance with Paragraphs a.(ii) and a.(iii), any revisions to those proposals resulting from comments provided by IDEM or EPA, and any additional revisions that are warranted to ensure that the studies will be consistent with Paragraph a.(i).

(v) Results of each study will be submitted as soon after the completion of each study as possible but no later than one year after completion of each study.

b. Impingement

(i) U. S. Steel must confirm on a quarterly (seasonal) basis that the through screen intake velocity's at each Cooling Water Intake Structure (CWIS) does not exceed the 0.5 ft/s.

(ii) For as long as this permit is effective, U. S. Steel will conduct scientifically valid impingement studies at the Lakeside, #1 Pump Station and #2 Pump Station. Sampling periods for the studies shall be determined after taking into consideration the availability of the species of interest to be impinged. Sampling techniques will be appropriate for the water body and ensure that sufficient data are developed to allow for a scientifically valid estimate of potential impingement impacts. Appropriate quality assurance/quality control procedures will be utilized.

(iii) Within one year of the effective date of the permit, U. S. Steel will submit to IDEM a specific, detailed proposal for how it intends to conduct the impingement studies consistent with Paragraph b.(ii) above during the second and third year of the permit term at the Lakeside, #1 Pump Station and #2 Pump Station. The proposal should be provided to IDEM at least 90 (ninety) days prior to the start of the proposed studies.

(iv) Until this permit is no longer effective, U. S. Steel will submit to IDEM a similar proposal for how its intends to conduct the impingement studies consistent with Paragraph b.(ii) for each subsequent two year period (i.e., during the fourth and fifth year that this permit is in effect; during the sixth and seventh years that this permit is in effect; etc.), that takes into account any information developed during the prior years' studies. These proposals shall be submitted to IDEM, at least 90 (ninety) days prior to the start of the proposed studies.

(v) U. S. Steel will conduct the impingement studies consistent with Paragraph b.(ii). The studies should be performed consistent with the proposals submitted in accordance with Paragraphs b.(iii) and b.(iv), any revisions to those proposals resulting from comments provided by IDEM or EPA, and any additional revisions that are warranted to ensure that the studies will be consistent with Paragraph b.(ii).

(vi) Results of each study will be submitted as soon after the completion of each study as possible but no later than one year after completion of each study.

3. FISH RETURN EVALUATION

Fish Returns shall be evaluated for all intakes to determine if they minimize fish mortality. US Steel shall submit to IDEM an evaluation of options (such as keeping the backwash water on after the screens stop to ensure fish return) to minimize fish mortality within one year of the effective date of the permit. This evaluation should include time frames to implement these measures. US Steel will implement any options that IDEM identifies as BTA after the information is available.

4. CHANGES DURING TERM OF PERMIT

US Steel shall provide advance notice to IDEM of any proposed changes to the CWISs or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.

D. INTAKE SCREEN WASH

The discharge of Intake Screen Backwash shall meet the Narrative Water Quality Standards contained in Part I.B. of the permit.

E. SPECIAL REPORTING REQUIREMENTS

1. NPDES effluent data are to be reported on the monthly DMRs as follows:

a. Daily Values

(i) Effluent concentrations less than the limit of detection (LOD) shall be reported as less than the value of the LOD. For example, if a substance is not detected at a concentration of one (1.0) milligram per liter, the value shall be reported as <1.0 mg/l.

(ii) Effluent concentrations greater than or equal to the LOD shall be reported at the measured result. Effluent concentrations greater than or equal to the LOD and less than the limit of quantification (LOQ) that are reported on a DMR shall be annotated on the DMR to indicate that the result is not quantifiable.

(iii) Mass discharge results which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge result.

(iv) Mass discharge values that are calculated from effluent concentrations greater than the limit of detection but less than the limit of quantitation shall be reported as the calculated value. These values shall be annotated on the DMR to indicate that the value is not quantifiable.

Mass discharge values that are calculated from effluent concentrations equal to and greater than the limit of quantitation shall be reported on the DMR as the calculated value.

b. Monthly Average of Daily Values

(i) For all parameters for which there is a monthly average, calculations that require averaging of measurements of daily results (both concentration and mass) shall use an arithmetic mean. When a daily discharge result is less than the LOQ, the equation in Part III.E.2., below shall be used to calculate a daily discharge value that shall be used in the calculation of the monthly average in place of the actual daily discharge result.

(ii) For all parameters for which the monthly average is less than the LOQ, daily effluent results, used in the determination of a monthly average effluent level, that are less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the LOD, and appropriate statistical techniques, a value other than zero (0) is warranted.

2. Averaging Analytical Values When One or More Values are Less than the LOQ.

Where the permittee samples more than once per month and obtains an analytical data base that contains concentration results below the LOQ, the permittee shall utilize the following protocol that sets a value to be used for analytical results below the LOQ according to their frequency of occurrence. These values can then be used to calculate the average value for DMR reporting.

a. For results that are less than the LOD:

V_{LOD} (or values) = (LOD) *(F_{LOD}) Eqn.1

Where:

$$F_{LOD} = 1 - \frac{\text{Number of Results Less Than the LOD}}{\text{Total Number of Results}} \quad \text{Eqn.2}$$

b. For results that are less than the LOQ (including results that are less than or equal to the LOD):

V_{LOQ} (or values) = (LOQ) *(F_{LOQ}) Eqn.3

Where:

$$F_{LOQ} = 1 - \frac{\text{Number of Results Less Than the LOQ}}{\text{Total Number of Results}} \quad \text{Eqn.4}$$

c. Process of generating database to be used to calculate monthly averages:

(1) For concentration values:

(a) LOD = The concentration-based LOD obtained from the table of analytical methods and detection and quantitation levels in Part I.C.4.d. of this permit.

(b) LOQ = The concentration-based LOQ obtained from the table of analytical methods and detection and quantitation levels in Part I.C.4.d. of this permit.

(c) All individual concentration results below the concentration-based LOD are assigned the value of V_{LOD}. This "V" is referred to as the "V_{LOD} – conc.".

(d) All individual concentration results below the concentration-based LOQ, but greater than or equal to the LOD are assigned the value of V_{LOQ}. This "V" is referred to as the "V_{LOQ} – conc.".

(2) For mass values:

(a) Generate a mass result from the corresponding concentration result and flow, converted to mass. This result is presented on the DMR.

(b) The "Number of Results Less than LOD", as used in Equation 2, is the number of concentration results below the concentration-based LOD.

(c) The "Number of Results Less Than the LOQ", as used in Equation 4, is the number of concentration results below the concentration-based LOQ (including the number of results less than the concentration-based LOD).

(d) The mass-based LOD, as used in the calculations of "V", as used in Equation 1, is obtained from the table of analytical methods and detection and quantitation levels in Part I.C.4.d. of this permit. This "V" is referred to as the "V_{LOD} - mass".

(e) The mass-based LOQ, as used in the calculation of "V", as used in Equation 3, is obtained from the table of analytical methods and detection and quantitation levels in Part I.C.4.d. of this permit. This "V" is referred to as the "V_{LOQ} - mass".

(f) If the corresponding concentration result is less than the concentration-based LOD, then the mass value is the V_{LOD} - mass.

(g) If the mass result is less than the mass-based LOQ and the corresponding concentration result is less than the concentration-based LOQ, and greater than or equal to the concentration-based LOD, then V_{LOQ} - mass is used.

(h) If the mass result is greater than or equal to the mass-based LOQ and the corresponding concentration result is less than the concentration-based LOQ, and greater than or equal to the concentration-based LOD, then V_{LOQ} - mass is used.

(i) If the mass result is less than the mass-based LOQ and the corresponding concentration result is greater than or equal to the concentration-based LOQ, then the mass result is used.

(j) If the mass result is greater than or equal to the mass-based LOQ and the corresponding concentration result is greater than or equal to the concentration-based LOQ, then the mass result is used.

All data points now have values and can be arithmetically averaged.

d. Example:

(1) Discharge Data

Assume the following are true:

(a) The effluent flow is 1.0 MGD

(b) Concentration-based permit limits are 15µg/l as a monthly average and 20 µg/l as a daily maximum.

(c) Mass-based permit limits are 0.13 lbs/day monthly average and 0.17 lbs/day daily maximum.

(d) Concentration-based LOD is 3.2 µg/l

(e) Concentration-based LOQ is 10 µg/l

(f) Mass-based LOD is 0.027 lbs/day

(g) Mass-based LOQ is 0.083 lbs/day

Actual Data (DMR Results)			Calculated Data (See Below)	
Concentration (µg/l)	Flow (MGD)	Mass (lbs/day)	Concentration (µg/l)	Mass (lbs/day)
<3.2	.09	<0.002	2.84	0.021
8	1.5	0.10	6.67	0.083
23	0.6	0.12	23	0.12
12	1.2	0.12	12	0.12
8	0.9	0.06	6.67	0.050
15	0.8	0.10	15	0.10
20	0.6	0.10	20	0.10
18	1.1	0.17	18	0.17
12	0.6	0.06	12	0.06
Monthly Average (for DMR)=			13	0.092

(2) **Concentration monthly average calculations:**

(a) The number of results below the concentration-based LOD is one (1), and the total number of values is (9), therefore:

$F_{LOD} = 1 - (1/9) = 0.889$

V_{LOD} – conc. = (3.2) * 0.889 = 2.84 µg/l

(b) The number of results below the concentration-based LOQ (including the results below the concentration-based LOD) is three (3), and the total number of values is nine (9), therefore:

$F_{LOQ} = 1 - (3/9) = 0.667$

V_{LOQ} – conc. = (10) * 0.667 = 6.67 µg/l

(c) For the purposes of calculating a monthly average value to put on the DMR, the one (1) daily result below the LOD is assigned a value of 2.84 µg/l, and the two (2) daily results below the LOQ (but greater than or equal to the LOD) are each assigned a value of 6.67 µg/l. (The concentration values of 2.84 µg/l and 6.67 µg/l shall not be put on the state DMR, instead, the daily results are to be put on the state DMR.)

(d) The arithmetic average is:

(2.84+6.67+23+12+6.67+15+20+18+12)/9 = 13 µg/l

The permittee would report a daily maximum of 23 µg/l and a monthly average of 13 µg/l on the DMR forms. In this example, the permittee complies with the monthly average permit limit but has a violation of the daily maximum limit.

(3) **Mass monthly average calculations:**

(a) The number of mass results is nine (9). The number of mass results calculated from a corresponding concentration result less than the concentration-

based LOD is one (1). This mass result is assigned a mass value that is calculated as follows:

V_{LOD} - mass = (0.027 lbs/day) * 0.889 = 0.024 lbs/day

[NOTE F_{LOD} = 0.889 based on the number of concentration results less than concentration-based LOD]

(b) The number of mass results calculated from a corresponding concentration result less than the concentration-based LOQ, and greater than or equal to the concentration-based LOD is two (2). These two (2) mass results are assigned a mass value that is calculated as follows:

V_{LOQ} - mass = (0.083 lbs/day) * 0.667 = 0.055 lbs/day

[NOTE F_{LOQ} = 0.667 based on the number of concentration results less than concentration-based LOQ (including the number of concentration results less than the concentration-based LOD)]

(c) The arithmetic average is:
(0.021+0.083+0.12+0.12+0.050+0.10+0.10+0.17+0.06)/9 = 0.092 lbs/day

The permittee would report a daily maximum of 0.17 lbs/day and a monthly average of 0.092 lbs/day on the DMR forms. In this example, the permittee complies with both the monthly average and the daily maximum permit limits.

F. POLYCHLORINATED BIPHENYL

There shall be no discharge of polychlorinated biphenyl (PCBs) compounds such as those commonly used for transformer fluid.

PART IV

Streamlined Mercury Variance (SMV)

Introduction

The permittee submitted an application for a streamlined mercury variance (SMV) on October 18, 2011, in accordance with the provisions of 327 IAC 5-3.5. The SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit. Based on a review of the SMV application, IDEM determined that application to be complete as outlined in 327 IAC 5-3.5-4(e). Therefore, the SMV was incorporated into the NPDES permit in accordance with 327 IAC 5-3.5-6.

On September 3, 2013, the permittee submitted a second set of SMV applications in accordance with the provisions of 327 IAC 5-3.5. Based on a review of the SMV applications, IDEM has determined that the applications are complete as outlined in 327 IAC 5-3.5-4(e). Therefore, the SMVs are being incorporated into the NPDES permit in accordance with 327 IAC 5-3.5-6.

Term of SMV

The SMV and the interim discharge limits previously approved and included in Parts I.A.7, 8, and 9, as well as the new SMV and interim discharge limits included in Parts I.A. 1, 2, 5, 15, and 19, Discharge Limitations Tables, will remain in effect until the NPDES permit expires under IC 13-14-8-9 (amended under SEA 620, May 2005). Pursuant to IC 13-14-8-9(d), when the NPDES permit is extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

Annual Reports

The annual report is a condition of the Pollutant Minimization Program Plan (PMPP) requirements of 327 IAC 5-3.5-9(a)(8). The annual report must describe the permittee's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. The annual report may also include documentation of chemical and equipment replacements, staff education programs, and other initiatives regarding mercury awareness or reductions. The complete inventory and complete evaluation required by the PMPP may be submitted as part of the annual report. **The permittee will submit the annual reports to IDEM on the anniversary of the effective date of this NPDES permit renewal, as indicated on Page 1 of this permit. Annual Reports should be submitted to the Office of Water Quality, Mail Code 65-42, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, Indiana 46204 2251.**

SMV Renewal

As authorized under 327 IAC 5-3.5-7(a)(1), the permittee may apply for the renewal of an SMV at any time within 180 days prior to the expiration of the NPDES permit. In accordance with 327 IAC 5-3.5-7(c), an application for renewal of the SMV must contain the following:

- All information required for an initial SMV application under 327 IAC 5-3.5-4, including revisions to the PMPP, if applicable.
- A report on implementation of each provision of the PMPP.
- An analysis of the mercury concentrations determined through sampling at the facility's locations that have mercury monitoring requirements in the NPDES permit for the two (2) year period prior to the SMV renewal application.
- A proposed alternative mercury discharge limit, if appropriate, to be evaluated by the department according to 327 IAC 5-3.5-8(b) based on the most recent two (2) years of representative sampling information from the facility.

Renewal of the SMV is subject to a demonstration showing that PMPP implementation has achieved progress toward the goal of reducing mercury from the discharge.

Pollutant Minimization Program Plan (PMPP)

The PMPP is a requirement of the SMV application and is defined in 327 IAC 5-3.5-3(4) as the plan for development and implementation of Pollutant Minimization Program (PMP). The PMPP is defined in 327 IAC 5-3.5-3(3) as the program developed by an SMV applicant to identify and minimize the discharge of mercury into the environment. PMPP requirements (including the enforceable parts of the PMPP) are outlined in 327 IAC 5-3.5-9. In accordance with 327 IAC 5-3.5-6, the permittee's PMPP is hereby incorporated within this permit below:

SCHEDULE AND STATUS OF PLANNED ACTIVITIES FOR OUTFALL 005

Row ID	**Planned Activity**	***Activity Type***	***Goal***	***Measure of Performance***	***Schedule of Action***
1	Complete Inventory	Type 1: Source Characterization	Finalize the inventory of listed equipment/materials, and usage rates.	Submittal of completed inventory to IDEM.	Within 9 months of SMV approval. Updated inventory will be provided as part of the Annual Progress Report.
2	Review of Purchasing Policies and Procedures	Type 3: Awareness and Containment Control	1. Review mercury content information from vendors/manufacturers. 2. Restrict or eliminate (as practicable) the purchase of mercury containing chemicals and equipment.	Implementation of Policies and Procedures that address the mercury content of materials.	Implemented/ Ongoing.
3	Mercury Awareness Training	Type 3: Awareness and Containment Control	Education and increased awareness.	Expand the existing employee health and safety training program to include additional mercury information.	Implemented/ Ongoing.
4	Good Housekeeping Practices: *Mercury Containing Chemicals and Materials*	Type 3: Awareness and Containment Control	Reduce possibility of accidental spills and releases.	Training of employees on good housekeeping practices that reduce the possibility of accidental spills and releases.	Implemented/ Ongoing.
5	Maintenance and Cleaning Practices	Type 3: Awareness and Containment Control	Proper and safe-handling during maintenance activities.	Implement procedures to minimize release of mercury from mercury-containing materials during maintenance and cleaning activities.	Implemented/ Ongoing.
6	Standard Operating Practices: Spill Prevention and Response: *Chemicals and Materials*	Type 3: Awareness and Containment Control	Safe and proper spill response for dealing with chemical spills. Reduce possibility of accidental spills and releases.	Training of employees on proper and safe spill response for dealing with chemical spills.	Implemented/ Ongoing.
7	Disposal Practices of Mercury-Containing Materials	Type 3: Awareness and Containment Control	Estimate quantity of mercury from materials that are properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed pursuant to applicable disposal/recycling regulations.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.

8	Disposal Practices of Mercury-Containing Items: *Bulbs/Lamps*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from equipment that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from lamps/bulbs.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
9	Disposal Practices of Mercury-Containing Items: *Batteries*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from batteries that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from mercury-containing batteries.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
10	*Outfall 005* Source Characterization: Water Treatment Additives - High Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
11	*Outfall 005* Source Characterization: Water Treatment Additives - Low Potential [(A)]	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 12 months of SMV approval.
12	*Outfall 005* Source Characterization: Sodium Hypochlorite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium hypochlorite used for mussel control at the intake.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
13	*Outfall 005* Source Characterization: Sodium Bisulfite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium bisulfite used for dechlorination of the final Outfall 005 discharges and intakes.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
14	*Outfall 005* Source Characterization: Main Process Chemicals	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 12 months of SMV approval.
15	Condensate Characterization [(B)]	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Already implemented.
16	*Outfall 501* Source Characterization: *Monitoring*	Type 1: Source Characterization	Continue to perform periodic mercury monitoring of Outfall 501 for comparison to previously collected mercury data.	Documentation of evaluation.	Ongoing/ implemented.

17	*Outfall 501*Alternatives for Reduction Evaluation: *Current Treatment*	Type 2: Alternatives for Reduction Evaluation	Evaluate the current sand filters with respect to mercury removal.	Documentation of evaluation.	Complete.
18	*Outfall 501* Alternatives for Reduction Evaluation: *Treatment Optimization*	Type 2: Alternatives for Reduction Evaluation: Outfall 501	Evaluate the option of chemical addition prior to the sand filters for increased mercury removal.	Documentation of evaluation.	Within 12 months of SMV approval.
19	Alternatives for Reduction Evaluation: *Mercury-Containing Chemicals and Materials*	Type 2: Alternatives for Reduction Evaluation	Investigate replacement/reduction options for in-service mercury-containing materials.	Documentation of evaluation.	The scope and schedule of this type of activity will be determined based on the outcome of the various source characterization activities.

Notes:

(A): This includes the boiler treatment chemicals listed in Attachment II.

(B): Condensates are not anticipated to be a significant source of mercury as discussed in Section 3.2.2.8 of the PMPP.

SCHEDULE AND STATUS OF PLANNED ACTIVITIES FOR OUTFALL 015

Row ID	**Planned Activity**	***Activity Type***	***Goal***	***Measure of Performance***	***Schedule of Action***
1	Complete Inventory	Type 1: Source Characterization	Finalize the inventory of listed equipment/materials, and usage rates.	Submittal of completed inventory to IDEM.	Within 9 months of SMV approval. Updated inventory will be provided as part of the Annual Progress Report.
2	Review of Purchasing Policies and Procedures	Type 3: Awareness and Containment Control	1. Review mercury content information from vendors/manufacturers. 2. Restrict or eliminate (as practicable) the purchase of mercury containing chemicals and equipment.	Implementation of Policies and Procedures that address the mercury content of materials.	Implemented/ Ongoing.
3	Mercury Awareness Training	Type 3: Awareness and Containment Control	Education and increased awareness.	Expand the existing employee health and safety training program to include additional mercury information.	Implemented/ Ongoing.
4	Good Housekeeping Practices: *Mercury Containing Chemicals and Materials*	Type 3: Awareness and Containment Control	Reduce possibility of accidental spills and releases.	Training of employees on good housekeeping practices that reduce the possibility of accidental spills and releases.	Implemented/ Ongoing.
5	Maintenance and Cleaning Practices	Type 3: Awareness and Containment Control	Proper and safe-handling during maintenance activities.	Implement procedures to minimize release of mercury from mercury-containing materials during maintenance and cleaning activities.	Implemented/ Ongoing.
6	Standard Operating Practices: Spill Prevention and Response: *Chemicals and Materials*	Type 3: Awareness and Containment Control	Safe and proper spill response for dealing with chemical spills. Reduce possibility of accidental spills and releases.	Training of employees on proper and safe spill prevention and response for dealing with chemical spills.	Implemented/ Ongoing.
7	Disposal Practices of Mercury-Containing Materials	Type 3: Awareness and Containment Control	Estimate quantity of mercury from materials that are properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed pursuant to applicable disposal/recycling regulations.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.

8	Disposal Practices of Mercury-Containing Items: *Bulbs/Lamps*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from equipment that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from lamps/bulbs.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
9	Disposal Practices of Mercury-Containing Items: *Batteries*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from batteries that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from mercury-containing batteries.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
10	*Outfall 015* Source Characterization: Sodium Hypochlorite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium hypochlorite used for mussel control at the intake.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
11	*Outfall 015* Source Characterization: Sodium Bisulfite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium bisulfite used for dechlorination of the final Outfall 015 discharge.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
12	*Leachate Treatment Plant Water Treatment Chemicals* Character-ization	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
13	*Boiler Water Treatment Chemicals*[A] Character-ization	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Already implemented.
14	*Outfall 607* Source Characterization: *Monitoring*	Type 1: Source Characterization	Continued periodic monitoring of Outfall 607 for mercury.	Documentation that mercury has been quantified.	Implemented/ Ongoing. Discussions of results will be provided as part of the Annual Progress Report.
15	*Outfall 607* Source Characterization: *Type of Mercury*	Type 1: Source Characterization	Characterize the types (filterable or dissolved) present in the Outfall 607 waste stream.	Documentation of characterization.	Implemented/ Ongoing. Discussions of results will be provided as part of the Annual Progress Report.
16	*Outfall 607* Alternatives for Reduction Evaluation: *Current Treatment*	Type 2: Alternatives for Reduction Evaluation	Evaluate the current treatment scheme with respect to mercury removal.	Documentation of evaluation.	Complete.

17	*Outfall 607* Alternatives for Reduction Evaluation: *Treatment Optimization*	Type 2: Alternatives for Reduction Evaluation	Evaluate the option of chemical addition prior to the filter press for increased mercury removal.	Documentation of evaluation.	Within 12 months of SMV approval.
18	*Outfall 607* Source Characterization: *Landfill sludges*	Type 1: Source Characterization	Evaluation of sludge inputs to landfill will be reviewed quarterly to confirm no significant changes in volume or sources. If a significant change occurs in current individual sludge disposal quantities or a new sludge accounting for more than 2% of total monthly mass disposed is added, it will be subjected to mercury characterization.	Documentation of evaluation.	Ongoing as needed.
19	Condensate Characterization (C)	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Already implemented.
20	Alternatives for Reduction Evaluation: *Mercury-Containing Chemicals and Materials*	Type 2: Alternatives for Reduction Evaluation	Investigate replacement/reduction options for in-service mercury-containing materials.	Documentation of evaluation.	The scope and schedule of this type of activity will be determined based on the outcome of the various source characterization activities.

Notes
:
(A): Chemicals that may be discharged via boiler blowdown to Outfall 015.
(B): Condensates are not anticipated to be a significant source of mercury as discussed in Section 3.2.2.7 of the PMPP.

SCHEDULE AND STATUS OF PLANNED ACTIVITIES FOR OUTFALL 034

Row ID	**Planned Activity**	***Activity Type***	***Goal***	***Measure of Performance***	***Schedule of Action***
1	Complete Inventory	Type 1: Source Characterization	Finalize the inventory of listed equipment/materials, and usage rates.	Submittal of completed inventory to IDEM.	Within 9 months of SMV approval. Updated inventory will be provided as part of the Annual Progress Report.
2	Review of Purchasing Policies and Procedures	Type 3: Awareness and Containment Control	1. Review mercury content information from vendors/manufacturers. 2. Restrict or eliminate (as practicable) the purchase of mercury containing chemicals and equipment.	Implementation of Policies and Procedures that address the mercury content of materials.	Implemented/ Ongoing.
3	Mercury Awareness Training	Type 3: Awareness and Containment Control	Education and increased awareness.	Expand the existing employee health and safety training program to include additional mercury information.	Implemented/ Ongoing.
4	Good Housekeeping Practices: *Mercury Containing Chemicals and Materials*	Type 3: Awareness and Containment Control	Reduce possibility of accidental spills and releases.	Training of employees on good housekeeping practices that reduce the possibility of accidental spills and releases.	Implemented/ Ongoing.
5	Maintenance and Cleaning Practices	Type 3: Awareness and Containment Control	Proper and safe-handling during maintenance activities.	Implement procedures to minimize release of mercury from mercury-containing materials during maintenance and cleaning activities.	Implemented/ Ongoing.
6	Standard Operating Practices: Spill Prevention and Response: *Chemicals and Materials*	Type 3: Awareness and Containment Control	Safe and proper spill response for dealing with chemical spills. Reduce possibility of accidental spills and releases.	Training of employees on proper and safe spill response for dealing with chemical spills.	Implemented/ Ongoing.
7	Disposal Practices of Mercury-Containing Materials	Type 3: Awareness and Containment Control	Estimate quantity of mercury from materials that are properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed pursuant to applicable disposal/recycling regulations.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.

8	Disposal Practices of Mercury-Containing Items: *Bulbs/Lamps*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from equipment that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from lamps/bulbs.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
9	Disposal Practices of Mercury-Containing Items: *Batteries*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from batteries that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from mercury-containing batteries.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
10	*Outfall 034* Source Character-ization: Water Treatment Additives - High Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
11	*Outfall 034* Source Characterizatio n: Water Treatment Additives - Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 12 months of SMV approval.
12	*Outfall 034* Source Characterizatio n: Sodium Hypochlorite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium hypochlorite used for mussel control at the intake.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
13	*Outfall 034* Source Characterizatio n: Sodium Bisulfite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium bisulfite used for dechlorination of the final Outfall 034 discharge.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
14	*Outfall 034* Source Characterizatio n: Process Chemicals - Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
15	*Outfalls 034* Source Characterizatio n: Process Chemicals - Very Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 12 months of SMV approval.
16	Condensate Characterizatio n [(A)]	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or	Documentation that mercury has been quantified.	Already implemented.

			vendor information.		
17	*Outfall 034, 604, 605, and 606* Source Characterization	Type 1: Source Characterization	Perform additional mercury monitoring of Outfalls 034, 604, 605, and 606 for comparison to previously collected mercury data for these locations.	Documentation of evaluation.	Within 12 months of SMV approval.
18	*Outfall 034, 604, 605, and 606* Source Characterization	Type 1: Source Characterization	Perform additional mercury monitoring of Outfalls 034, 604, 605, and 606 that includes analysis of both total and dissolved mercury.	Documentation of evaluation.	Within 12 months of SMV approval.
19	Alternatives for Reduction Evaluation: *Mercury-Containing Chemicals and Materials*	Type 2: Alternatives for Reduction Evaluation	Investigate replacement/reduction options for in-service mercury-containing materials.	Documentation of evaluation.	The scope and schedule of this type of activity will be determined based on the outcome of the various source characterization activities.

Notes:

(A): Condensates are not anticipated to be a significant source of mercury as discussed in Section 3.2.2.8 of the PMPP.

SCHEDULE AND STATUS OF PLANNED ACTIVITIES FOR OUTFALL 028/030

Row ID	Planned Activity	*Activity Type*	*Goal*	*Measure of Performance*	*Schedule of Action*
1	Complete Inventory	Type 1: Source Characterization	Finalize the inventory of listed equipment/materials, and usage rates.	Submittal of completed inventory to IDEM.	Within 9 months of SMV approval. Updated inventory will be provided as part of the Annual Progress Report.
2	Review of Purchasing Policies and Procedures	Type 3: Awareness and Containment Control	1. Review mercury content information from vendors/manufacturers. 2. Restrict or eliminate (as practicable) the purchase of mercury containing chemicals and equipment.	Implementation of Policies and Procedures that address the mercury content of materials.	Implemented/ Ongoing.
3	Mercury Awareness Training	Type 3: Awareness and Containment Control	Education and increased awareness.	Expand the existing employee health and safety training program to include additional mercury information.	Implemented/ Ongoing.
4	Good Housekeeping Practices: *Mercury Containing Chemicals and Materials*	Type 3: Awareness and Containment Control	Reduce possibility of accidental spills and releases.	Training of employees on good housekeeping practices that reduce the possibility of accidental spills and releases.	Implemented/ Ongoing.
5	Maintenance and Cleaning Practices	Type 3: Awareness and Containment Control	Proper and safe-handling during maintenance activities.	Implement procedures to minimize release of mercury from mercury-containing materials during maintenance and cleaning activities.	Implemented/ Ongoing.
6	Standard Operating Practices: Spill Prevention and Response: *Chemicals and Materials*	Type 3: Awareness and Containment Control	Safe and proper spill response for dealing with chemical spills. Reduce possibility of accidental spills and releases.	Training of employees on proper and safe spill prevention and response for dealing with chemical spills.	Implemented/ Ongoing.
7	Disposal Practices of Mercury-Containing Materials	Type 3: Awareness and Containment Control	Estimate quantity of mercury from materials that are properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed pursuant to applicable disposal/recycling regulations.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
8	Disposal Practices of Mercury-Containing Items: *Bulbs/Lamps*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from equipment that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from lamps/bulbs.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.

9	Disposal Practices of Mercury-Containing Items: *Batteries*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from batteries that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from mercury-containing batteries.	Implemented/ Ongoing. Estimated disposed of quantities will be provided as part of the Annual Progress Report.
10	*Outfall 028/030* Source Characterization: Water Treatment Chemicals - High Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
11	*Outfall 028/030* Source Characterization: Water Treatment Chemicals - Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 12 months of SMV approval.
12	*Outfall 028/030* Source Characterization: Sodium Hypochlorite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium hypochlorite used for mussel control at the intake.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
13	*Outfall 028/030* Source Characterization: Sodium Bisulfite	Type 1: Source Characterization	Further characterize the specific vendor supplied sodium bisulfite used for dechlorination of the final Outfall 028/030 discharge.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
14	*Outfall 028/030* Source Characterization: Process Chemicals - Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 9 months of SMV approval.
15	*Outfalls 028/030* Source Characterization: Process Chemicals - Very Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 12 months of SMV approval.
16	Condensate Characterization (A)	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Already implemented.
17	*Outfall 603* Source Characterization	Type 1: Source Characterization	Perform additional mercury monitoring of internal Outfall 603 sources for comparison to previously collected mercury data for these locations.	Documentation of evaluation.	Within 12 months of SMV approval.
18	*GW-10* Source Characterization	Type 1: Source Characterization	Perform additional source survey sampling for GW-10 and the select areas identified by the 2012 source survey program.	Documentation of evaluation.	Within 12 months of SMV approval.

19	*ArcelorMittal Plate Mill* Source Characterization	Type 1: Source Characterization	Mercury characterization of associated water treatment and/or process chemicals.	Documentation of evaluation.	The scope and schedule of this type of activity will be determined if process wastewater producing operations are resumed.
20	Alternatives for Reduction Evaluation: *Mercury-Containing Chemicals and Materials*	Type 2: Alternatives for Reduction Evaluation	Investigate replacement/reduction options for in-service mercury-containing materials.	Documentation of evaluation.	The scope and schedule of this type of activity will be determined based on the outcome of the various source characterization activities.

Notes:
(A): Condensates are not anticipated to be a significant source of mercury as discussed in Section 3.2.2.8 of the PMPP.

National Pollutant Discharge Elimination System

FACT SHEET for

U.S. Steel Corporation, Gary Works

March 2014

Indiana Department of Environmental Management

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Permittee:	U.S. Steel Corporation Gary Works One North Broadway Gary, IN 46402 Lake County
Existing Permit Information:	Permit Number: IN0000281 Expiration Date: February 28, 2015
Source Contact:	Mr. Robert Lange, Environmental Control Manager (219) 888-4500
Source Location:	Same as above
Receiving Stream:	Grand Calumet River
Proposed Action:	Permit modification to apply Streamlined Mercury Variance to Outfalls 005, 015, 028/030, and 034. Date Request Received: September 3, 2013
Source Category	NPDES Major – Industrial
Permit Writers:	Nicole Gardner, Senior Environmental Manager (317) 232-8707 or ngardner@idem.in.gov

1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from the U.S. Steel Corporation on September 3, 2013, to modify the Gary Works permit to approve and incorporate streamlined mercury variances (SMV) at Outfalls 005, 015, 028/030, and 034. The application was determined to be complete.

The Federal Water Pollution Control Act of 1972 and subsequent amendments require a NPDES permit for the discharge of wastewater to surface waters. Furthermore, Indiana Statute 13-15-1-2 requires a permit to control or limit the discharge of any contaminants into state waters or into a publicly owned treatment works. This proposed permit action by IDEM complies with both federal and state requirements.

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.8 and 124.6, as well is Indiana Administrative Code (IAC) 327 Section 5, development of a Fact Sheet is required for NPDES permits. This document fulfills the requirements established in those regulations.

This Fact Sheet was prepared in order to document the factors considered in the development of NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, receiving water conditions, and wasteload allocations to meet Indiana Water Quality Standards. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Fact Sheet where necessary.

2.0 PERMIT MODIFICATION

2.1 Streamlined Mercury Variances (SMV)

The U.S. Steel Gary Works NPDES permit, which was renewed and became effective on March 1, 2010, included new monitoring requirements for mercury at several outfalls, including final Outfalls 005, 010, 028/030 and 034. Source water is withdrawn from Lake Michigan.

Outfall 005 discharges to the Grand Calumet River and is limited to non-contact cooling water used in the coal preparation, coke and coke byproducts manufacturing processes, non-contact cooling water used in the coke oven gas desulfurization facility, non-contact cooling water used in the coke plant boiler houses, treated process wastewater from the coke and coke byproducts manufacturing processes (internal Outfall 501), steam condensate, and storm water runoff.

Outfall 015 discharges to the Grand Calumet River and is limited to non-contact cooling water from blast furnace and sinter plant, steam condensate, treated SWD-1 Landfill wastewater, North Tennessee Street Drainage Sump effluent, and storm water runoff.

Outfall 034 discharges to the Grand Calumet River and is limited to Internal Outfalls, 604, 605, and 606, non-contact cooling water from the finishing operations, non-contact cooling water from the ferrous chloride recycling discharge, steam condensate, and storm water runoff.

Outfalls 028/030 discharges to the Grand Calumet River and is limited to treated wastewater from steelmaking, vacuum degassing, continuous casting and hot forming process wastewaters (Internal Outfall 603), storm water runoff, non-contact cooling water and direct contact slab cooling water.

In accordance with 327 IAC 5-2-11.5(b), Water Quality-Based Effluent Limitations (WQBELs) for mercury were included in the permit (in addition to interim discharge limits) with a 5-year Schedule of Compliance (SC). In anticipation of not being able to meet the final mercury WQBELs, the permittee submitted Streamlined Mercury Variance (SMV) applications for mercury.

The SMV provides a streamlined process for obtaining a variance from a water quality criterion used to establish WQBELs for mercury. The goal of the SMV is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs. Requirements for the SMV are outlined in 327 IAC 5-3.5. The SMV will remain in effect until the permit expires under IC 13-14-8-9. This statute states that a variance may not be granted for more than five years and may not be renewed for more than five years. Pursuant to IC 13-14-8-9(c), when the SMV is incorporated into a permit extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect until the permit expires. The permittee may renew the SMV under the provisions of 327 IAC 5-3.5-7.

2.1.1 Interim Discharge Limits

The interim discharge limits were developed in accordance with the provisions of 327 IAC 5-3.5-8, using the highest daily mercury value from the most recent 12 to 24 month period, each interim limit not to exceed 30 ng/l. Each reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value is to be calculated as the average of daily maximum values for mercury measured over the most recent (rolling) twelve-month period. **Reporting of the annual average value for mercury is not required during the first year of the permit term.** Compliance with the interim discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

A statistical outlier analysis was conducted using the Discordance test with a critical value of 3 to determine potential statistical outliers. These outliers were then eliminated from the data sets. IDEM determined that in the dataset for Outfall 005, 5.3 ng/l was a statistical outlier and in the dataset for Outfall 028, 3.2 ng/l was a statistical outlier. Therefore, the permit is being modified to include the following interim discharge limits for mercury:

Outfall 005: **2.4 ng/l**
Outfall 015: **3.7 ng/l**
Outfall 028/030: **2.8 ng/l and 3.0 ng/l respectively**
Outfall 034: **2.5 ng/l**

Mercury monitoring is to be conducted bi-monthly (i.e. every other month) for the term of the permit. Bi-monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year. Mercury monitoring and analysis will be performed using EPA Test Method 1631, Revision E. If Method 1631, Revision E is further revised during the term of this permit, the permittee and/or its contract laboratory is required to utilize the most current version of the method immediately after approval by EPA.

2.1.2 Pollutant Minimization Program Plan (PMPP)

The SMV rule requires the permittee to develop a Pollutant Minimization Program Plan (PMPP) which addresses source identification and planned activities intended to minimize the release of mercury to waters of the state. The PMPP was public noticed prior to submittal to IDEM in accordance with 327 IAC 5-3.5-9(c). No comments were received during the public notice period. The portions of the permittee's PMPP that are enforceable under the NPDES permit (i.e., all plans, planned activities and schedules) are included in the NPDES permit as Part IV. The SMV applications, including the entire PMPP, are available for review at IDEM, Office of Water Quality/NPDES Permit Section, 12th floor/Rm 1203, 100 N. Senate Ave, Indpls., IN.

2.1.3 Annual Reports

The permittee is required to submit annual reports outlining the facility's progress toward fulfilling the requirements of the PMPP. The annual report must describe the SMV applicant's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. The annual report may also include documentation of chemical and equipment replacements, staff education programs, and other initiatives regarding mercury awareness or reductions. The complete inventory and complete evaluation required by the PMPP, as well as proposed adjustments to the PMPP, may be submitted as part of the annual report. The permittee will submit the annual reports to IDEM on the anniversary of the effective date that incorporates the SMV into the NPDES permit.

IDEM will review the annual report when considering renewal of an SMV in accordance with 327 IAC 5-3.5-7(b). This rule states that IDEM may renew an initial SMV application in accordance with IC 13-14-8-9 if the applicant demonstrates that implementation of the PMPP has achieved progress toward the goal of reducing mercury from its discharge except as provided in subsection (d). Subsection (d) states that a PMPP must be revised if implementation of the original PMPP does not lead to demonstrable progress in minimizing the discharge of mercury. If the applicant can provide information, as part of a revision to a PMPP that demonstrates there is no known reasonable additional action that will reduce mercury, the PMPP may remain as previously approved.

2.2 Additional modifications

IDEM proposes to remove Outfall 010 and all previously applicable language from the permit. The redirection of Outfall 010 through Outfall 005 was completed June 5, 2011. The combined discharge is regulated as Outfall 005 in Part I.A.2. All references and requirements related to Outfall 010 are to be removed from the permit.

IDEM has chosen to reprint the entire permit for this modification due to the removal of Outfall 010. Additionally, IDEM has updated Parts II.B. and II.C. to allow the permittee to submit select reports via email. The list of changes is as follows:

Page(s)	Reason for Change/Modification
1	Permit Modification Cover Page
2	Removal of Outfall 010
3-6	SMV applied to Outfall 005

8	Removal of Outfall 010
9-11	SMV applied to Outfall 015
26-28	SMV applied to Outfall 028/030
33-35	SMV applied to Outfall 034
54	Reference to Outfall 010 flow removed from [7]
61-62	Schedule of Compliance for Outfall 010 (Benzo(a)pyrene
85-88	References to Outfall 010 removed from Part I.L. (Whole Effluent Toxicity Limitations)
92	References to Outfall 010 removed from Part I.O. (Visible Corrective Action Monitoring Program)
92	References to Outfall 010 removed from Part I.N. (Zebra and Quagga Mussel Control and Chlorination)
102	Language updated in Part II.B.2.e.(2) to allow for email submittal of unanticipated event reports.
105	Language updated in Part II.C.3.(d) to update state form references and allow for email submittal of Bypass/Overflow Reports (State Form 48373) and Noncompliance 24-Hour Notification Reports (State Form 54215).
105	Language updated in Part.II.C.4. "Other Compliance/Noncompliance Reporting"
126-139	Part IV updated to include SMV for Outfalls 005, 015, 028/030, and 034.

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE OF DRAFT PERMIT MODIFICATION WITH STREAMLINED MERCURY VARIANCE

PUBLIC NOTICE NO. 2014 – 3F - SMV
NOTICE DATE: MARCH 21, 2014
RESPONSE DATE DUE: APRIL 21, 2014

MAJOR – MODIFICATION

U.S. STEEL - GARY WORKS FACILITY, Permit No. IN0000281, LAKE COUNTY, Gary, IN. This facility is an integrated steel mill, manufacturing iron, steel & coke products, and coke-making byproducts. The facility discharges non-contact cooling water (95%, 275-280 MGD) which is withdrawn from Lake Michigan, storm water & process wastewaters through fourteen outfalls to Lake Michigan & the Grand Calumet River. The sum of the discharge from these outfalls is equivalent to the Grand Calumet River flow (~290 MGD).
U.S. Steel submitted four SMV applications for the Gary Works Facility on September 3, 2013, under rule 327 IAC 5-3.5 (SMV Requirements & Application Process) for Outfalls 005, 015, 028/030, and 034. IDEM proposes to modify this permit to incorporate the four SMV's which also removes Outfall 010. IDEM published a Public Notice to solicit public comment regarding receipt of the complete Streamlined Mercury Variance applications from November 2, 2013 through December 2, 2013 (PN # 2013-11A-SMV). Permit Manager: Nicole Gardner at 317/232-8707, ngardner@idem.in.gov. This modification will be published in the Post-Tribune & The (Munster) Times to solicit public comment.

PROCEDURES TO FILE A RESPONSE

Draft documents are available for inspection at IDEM, Office of Water Quality, 100 N. Senate Av, Indianapolis, IN - 12th floor (east end elevators) from 9 – 4, M - F, (copies 10¢ per page). A copy of the Draft Permit is on file at the local County Health Department. Please tell others you think would be interested in this matter. See these sites for your rights & responsibilities: Public Participation: http://www.in.gov/idem/5474.htm; Citizen Guide: http://www.in.gov/idem/5903.htm.

Response Comments: The proposed decision to issue a permit is tentative. Interested persons are invited to submit written comments on the Draft permit. All comments must be postmarked no later than the Response Date noted to be considered in the decision to issue a Final permit. Deliver or mail all requests or comments to the attention of the Permit Writer at the above address, (mail code 65-42 PS).

To Request a Public Hearing: Any person may request a Public Hearing. A written request must be submitted to the above address on or before the Response Date noted. The written request shall include: the name and address of the person making the request, the interest of the person making the request, persons represented by the person making the request, the reason for the request and the issues proposed for consideration at the Hearing. The Department will determine whether to hold a Public Hearing based upon the comments and the rationale for the request. Public Notice of such a Hearing will be circulated in at least one newspaper in the geographical area of the discharge and to those persons submitting comments and/or on the mailing list at least 30 days prior to the Hearing.